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UNITED STATES DEPARTMENT OF COMMERCE
United States patent and Trademark Office
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Alexandria, Virginia 22313-1450

Examiner: Donna V Lui
Art Unit: 2675
Application number: 10/621,216
Filing date: 07/17/2003

Title of invention: A Browsing Based Chinese Input Method

1/12/2006

Dear Donna:

This is to reply to the USPTO Office action of date 10/19/2005 regarding the patent application number 10/621,216 : A Browsing Based Chinese Input Method.

Elections/Restrictions
(Actions 1-4)

Attached is a revised version of the application. It is rewritten to reflect that the invention has been restricted to Claims 1-10 and 20.

Specification
(Actions 5)

The abstract has been rewritten to compensate the restriction to Claims 1-10 and 20 and to address other suggestions in Action 5.

Claim Objections
(Actions 6-8)

Claims have been rewritten in the revised version to address the objections.

Claim Rejections – 35 § 112
(Actions 9-17)

Claims have been rewritten in the revised version to address the objections. The operation of touching a tone key to select tone in the original version (page 34/line 1~40) has been merged with the PTR-operation to form the PTRT-operation in the revised version. Two protocols for the user-machine communications have been extracted from the procedures of the original version (page 75/Figure 18 and page 79/Figure 23) and stated explicitly in the claims of the revised version.

Claim Rejections – 35 § 103
(Actions 18-19)

The main reason for Actions 18-19 as we (the applicants) understand is that our invention has been considered unpatentable over Zhang (Patent no.:US 6,809,725 B1, herein after referred to as “Zhang”).

In fact, “Zhang” and our invention use fundamentally different user operations in designing Chinese input methods. “Zhang” uses the traditional mouse click operations (column 4, line 60-64) to do separate single phonetic and tone selections, while our invention devised a press-touch-release (ptr) mouse operation to sequentially select three phonetic symbols plus a tone symbol in one continuous movement. This fundamental operational difference imposes big impacts on every aspect of the input method design, such as key selection, keyboard layout, user operation, and the phonetic symbol strings a user produces to communicate with the system for phrase selection.

On the surface, it may seem that, as the ptr-operation is so easy to use, it may also be applied to Zhang’s on-screen keyboard to enhance its performance. However, since Zhang’s design did not consider the ptr-operation as a priori, the resulting layout of the on-screen Chinese keyboard in Zhang’s design cannot take full-advantage of the ptr-operation, and in some cases, it even becomes a hindrance to the execution of ptr-operations.

Zhang’s design requires a user to enter the full spellings of the first and the second characters of a Chinese phrase to refine phrase set. However, the inherent ambiguity in Chinese phonetic spelling between consecutive words mandates the need for an extra action, as a separation mark, to be present in all click-based input methods. In earlier click-based input methods, such as in TwinBridge (User’s Guide version 4.0, 1995 TwinBridge Software Corporation), a user is allowed to enter partial spellings for phrase set refining purpose. TwinBridge named the input method “abbreviated method.” Extra separation marks are needed in the abbreviated method in situations where ambiguity exists in parsing phonetic symbol strings into syllable substrings. A sequence of partial spellings is in general much more powerful in refining candidate set of longer phrases than full spellings. However, because of the parsing ambiguity problem, the abbreviated method was hard to use.

In our invention, each ptr-operation clearly indicates the termination of a leading phonetic string of a character, without the need for extra separation marks. A leading phonetic string can be either full or partial. Therefore our invention allows a user to enter full spellings of phrase characters with ease. It also enables a user to efficiently and seamlessly enter a sequence of partial spellings of phrase characters without using separation marks. The separation of syllables is automatic. This makes the strategy of entering partial spellings of phrase characters attractive, and it drastically increases the number of phrases a system can properly handle.

The simplicity of the ptr-operation in our invention may make a person feel and think that it is obvious that a person having ordinary skill in the art can envision it and develop similar improvement. Actually it is not. The mouse has been around and in use for more than 30 years, yet to use it as an alternative means to efficiently input

Chinese, other than applying the click-based input methods, is still lacking. This shows that conceiving a simple solution for Chinese input problem is not obvious. The fact that an expert skillful in the art may fail to go beyond the traditional mouse click technique in the design such as in "Zhang" further proves that conceiving such an elegant solution is not only nontrivial, but is extremely hard.

In the appendix of this correspondence we discuss and compare in details the differences of a click-based design and a ptr-operation based design. The introduction and the claims of the revised patent application have been rewritten to make these points clearer.

We would like to have our application being reconsidered and hope that the present modifications and explanations can satisfy the patent requirements. We would appreciate your further instructions should there still be unclear points in our revised version of the application.

Thanks,

A handwritten signature in black ink, appearing to read "Min-Wend Du". The signature is fluid and cursive, with the first name "Min-Wend" and the last name "Du" clearly distinguishable.

Min-Wend Du
19 Pondview Dr.
Acton, MA 01720
Tel. Off. (781) 466-2083

Attachment: Revised version of patent application number 10/621,216 :

A Browsing Based Chinese Input Method.